



# Centralized Sensing for Educational Institutions

Indoor Air Quality and energy savings continue to be an important topic of conversation, especially in our educational institutions. The challenge is that most schools do not have the resources to maintain/calibrate the volume of sensors required to achieve their desired goals.

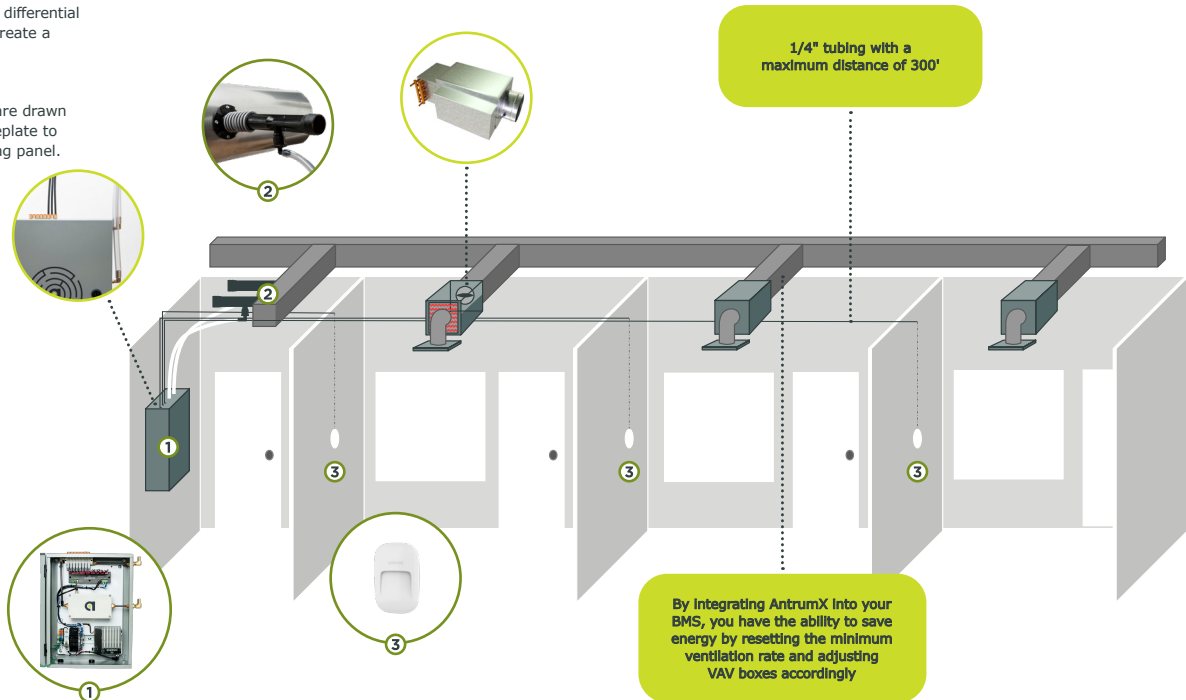
Even as wall-mounted sensing technology improves, the location and number of sensors represent a significant challenge for your facilities team.

Introducing AntrumX™, a centralized and scalable indoor monitoring platform that solves many of the problems associated with wall-mounted sensors, allowing you to satisfy code requirements today while preparing for tomorrow.

With the ability to analyze 1, 2, or even 12 distinct indoor pollutants and consolidate sensors for 16 individual zones into one device, the AntrumX centralized sensing platform has revolutionized the way facilities managers manage their buildings, providing **more sensing with fewer sensors**.

## SAMPLE INSTALLATION

- ① **MONITORING PANEL**  
Contains the sensor pack.
- ② **AIR ACCELERATOR**  
Uses building differential pressure to create a vacuum.
- ③ **FACEPLATE**  
Air samples are drawn from the faceplate to the monitoring panel.





## Benefits of Antrum’s Centralized Sensing

### Accuracy

Sensors require calibration. Using one sensor for 16 independent zones, including outside air, allows for more accurate data, cancels sensor drift when utilizing a differential control strategy, and leads to better control and a healthier indoor environment.

### Maintainability

AntrumX uses only 6% of the number of sensors compared to wall-mounted sensing solutions, allowing 16 zones to be calibrated simultaneously in less than one minute.

### Scalability

The AntrumX platform was designed for future scalability by allowing facilities to increase their sensing capabilities with a one minute replacement procedure.

### Total Cost of Ownership

The AntrumX platform saves 45%-60% when compared to wall-mounted sensing solutions, not including energy savings through more accurate and actionable data.

Total Cost of Ownership (TCO)								
Parameters			Initial Cost	5th Yr. Calibration	10th Yr. Replacement	15th Yr. Calibration	20th Yr. Replacement	TCO for 20 Years
<b>32 Spaces</b> What you should be doing.	RH, CO <sub>2</sub>	Space-Mounted <sup>1</sup>	\$16,000	\$4,800	\$16,000	\$4,800	\$16,000	\$57,600
		AntrumX <sup>2</sup>	\$15,700	\$2,000	\$2,000	\$2,000	\$2,000	\$23,700
<b>32 Spaces</b> What is likely happening.	RH, CO <sub>2</sub>	Space-Mounted <sup>1</sup>	\$16,000	-	\$16,000	-	\$16,000	\$48,000
		AntrumX <sup>2</sup>	\$15,700	-	\$2,000	-	\$2,000	\$19,700

<sup>1</sup>Space-Mounted Sensors: a. All costs exclude labor | b. CO<sub>2</sub>/RH wall sensor estimated \$150 per sensor to calibrate | c. CO<sub>2</sub>/RH wall sensor estimated at \$500 per room to owner

<sup>2</sup>AntrumX: a. All costs exclude labor | b. Five-year milestones represent the cost to replace the sensor pack(s) in the panel(s)

## ASHRAE 62.1, Table 8-1: Minimum Maintenance Activity and Frequency for Ventilation System Equipment and Associated Components

Inspection/Maintenance Task	Frequency
Verify the accuracy of permanently mounted sensors whose primary function is outdoor air delivery monitoring, outdoor air delivery verification, or dynamic minimum outdoor air control, such as flow stations at an air handler and those used for demand control ventilation, including CO <sub>2</sub> sensors. A sensor failing to meet the accuracy specified in the O&M manual shall be recalibrated or replaced. Performance verification shall include output comparison to a measurement reference standard consistent with those specified for similar devices in ASHRAE Standard 41.2 or ASHRAE Standard 111.	Five years